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Eosinophils, eosinophilic cytokines (interleukin-5), and antieosinophilic therapy in asthma.

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Eosinophils are believed to be key effector cells in producing the bronchial mucosal inflammation characteristic of allergic asthma. Given the perceived importance of eosinophils in allergic inflammation, they have been logical therapeutic targets. As knowledge of eosinophil biology increases, eosinophils are targeted with specific therapies blocking their maturation, activation, and chemotaxis. Therapeutic targets include eosinophil-specific cytokines, primarily interleukin-5, and chemokines, eg, eotaxin.Several studies over the last year have reported on therapies effective at reducing eosinophil numbers in asthmatics, including two humanized monoclonal antibodies against interleukin-5 and recombinant human interleukin-12. Surprisingly, despite their effectiveness at depleting eosinophils, there was no evidence of clinical improvement in any of the parameters studied. These and all other relevant studies published within the last year are reviewed by this article. After publication of these studies, some commentators questioned the role of eosinophils in allergic inflammation. Current evidence for and against eosinophils as effector cells in asthma is reviewed.

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